



FEDERAL AUTONOMOUS INSTITUTION

RUSSIAN MARITIME REGISTER OF SHIPPING

REPRESENTATIVE
OFFICE IN SWEDEN

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Skipper Electronics AS
PO Box 151 Manglerud,
N-0612, Oslo
Norway

Наш №: 262-381-271-240215

Дата: 31.08.2018

Our ref:

Date:

Ваш №.: ---

Дата: ---

Your ref.: E-mail

Date: 23.08.2018

Re.: Renewal of type approval certificates 11.10049.262, 12.10089.262, 12.10090.262 for the following products: Electromagnetic Log, type: Skipper EML 224 Compact; Navigational Graphic Depth Sounder, type: Skipper GDS 101, Dual Channel Navigational Graphic Depth Sounder, type: Skipper GDS 102.

Dear Mrs. Anne Karin Bjerkestrand,

We hereby conform that sets of the technical documentation for renewal of the a.m. type approval certificates were considered and approved by RS in accordance with applicable requirements of part V Rules for the equipment of sea going ships edition 2018. Part IV, section 16 RS Rules for technical supervision during construction of ships and manufacture of materials and products for ships edition 2018, Technical regulation on safety of sea transport items –TR-620, SOLAS-74 Reg. V/18, V/19 & X/3, IMO Resolutions A.964(17), A.824(19), MSC.96(72), MSC.191(79), MSC.36(63), MSC.97(73).

Representative of RS Branch office in Sweden did survey of the manufacture facilities and was witness of the FAT test for the above mentioned products.

Bases on positive results of the survey and consideration of the technical documentation we see no problem for contract delivery pending type approval certificates registration.

Yours faithfully,

A.Klebanovskiy
Manager of Representation.

Executor: D. Fesenko
Tel.: +46-031-15-82-40/17



РОССИЯ



RUSSIA

№ 00886

МИНИСТЕРСТВО ТРАНСПОРТА РОССИЙСКОЙ ФЕДЕРАЦИИ
MINISTRY OF TRANSPORT OF THE RUSSIAN FEDERATIONФЕДЕРАЛЬНОЕ АГЕНТСТВО МОРСКОГО И РЕЧНОГО ТРАНСПОРТА
FEDERAL AGENCY OF MARITIME AND RIVER TRANSPORTСВИДЕТЕЛЬСТВО
ОБ ОДОБРЕНИИ ТИПА АППАРАТУРЫCERTIFICATE
OF EQUIPMENT TYPE APPROVAL

Свидетельство выдается в соответствии с приказом Минтранса России от 10.02.2010 г. № 32	The Certificate is given in accordance with the Order of the Ministry of Transport of the Russian Federation of 10.02.2010 № 32
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Аппаратура
*Equipment*Навигационный эхолот
Navigational Echo Sounder

Тип / Type

SKIPPER GDS102

Состав аппаратуры / List of Units

№ Название блока / Name of Unit Тип / Type

Основные блоки / Standard Units

1. Основной дисплей / Operational Unit – GDS102

Версия ПО / SW Version: 1.12.7

2. Излучатель / Transducer

50 кГц / 50 kHz

– TGM60-50-xxL

200 кГц / 200 kHz

– TGM50-200-xxL

– NGM100-200-xxL

Дополнительные блоки / Optional Units

3. Цифровой репитер глубины /
Digital Depth Repeater – IR301

4. Мульти репитер / Multy Repeater – CD401MR-SB

Изготовитель
*Manufacturer*SKIPPER Electronics AS, Норвегия
SKIPPER Electronics AS, Norway

Адрес / Address

Enebakkveien 150, Ryen, 0680 Oslo, Norway

Тел. / Tel.

+47-233-02-270

Факс / Fax

+47-233-02-271

E-mail

skipper@skipper.no

Web

http://www.skipper.no

Акт одобрения типа
Type approval report

№ 3/1 – 3164 – 2019А от 27.11.2019 г.

№ 3/1 – 3164 – 2019А of 27.11.2019

Настоящим удостоверяется, что аппаратура соответствует Резолюциям ИМО А.694(17), А.224(VII), MSC.74(69) Приложение 4, MSC.191(79).

*This is to certify that the equipment complies with IMO Resolutions A.694(17), A.224(VII), MSC.74(69) Annex 4, MSC.191(79).*Действительно до 27 ноября 2024 г.
но может быть изъято в любое время, если это
будет признано необходимым РосморречфлотомValid until 27th November 2024
but may be withdrawn at any time if this
is considered necessary by Rosmorrechflot№ SC – 3/1 – 3164 – 2019
27.11.2019

РОСМОРРЕЧФЛОТ / ROSMORRECHFLOT

А. Пошивай
A. Poshivay



中国船级社
CHINA CLASSIFICATION SOCIETY

证书格式号/Form: T01.02-
HQ001666

型式认可证书 CERTIFICATE OF TYPE APPROVAL

证书编号/Certificate No. BG18T00009_02

兹证明本证书所述制造厂生产的下列产品能够满足下面列明认可标准的要求。

This is to certify that the following products produced by the manufacturer stated in the certificate can meet the requirements of the approval standards listed below.

认可产品/ Product Approved

回声测深仪
ECHO SOUNDER

制造厂/ Manufacturer

SKIPPER Electronics AS

Enebakkveien 150, Ryen Oslo

附加标志/ Notations

无/Nil.

认可标准/ Approval Standard

- 1.SOLAS 74 as amended, Regulations V/18,V/19 & X/3
- 2.IMO Resolution A.224(VII)
- 3.IMO Resolution A.694(17)
- 4.IMO Resolution MSC.36(63)
- 5.IMO Resolution MSC.74(69)
- 6.IMO Resolution MSC.97(73)

证书有效期至/ This Certificate is valid until

2022年1月25日 / Jan. 25, 2022

发证机构

中国船级社卑尔根办事处

Issued by

CCS Bergen Branch

签发日期

2018年7月18日

Date

Jul. 18, 2018

本证书根据中国船级社《钢质海船入级规范》及有关程序规定签发。关于证书的有关规定见本证书背面的说明。当本证书包括多页纸张时，则所有证书页为一个整体，必须同时使用。每一页证书均须由本社盖章方为有效。证书复印件无效。任何单位和个人均不应摘录或节选本证书的部分内容。本认可证书不代表本社对个体产品质量的检验。有关各方对所持证书的真实性有疑问时，可以向本社检验机构咨询。

This Certificate is issued pursuant to the Rules for Classification of Sea-going Steel Ships and related procedures of the Society. Refer to the back of the certificate for detailed requirements of the certificate. When the certificate consists of more than one page, all pages of the certificate are taken as a whole and are used simultaneously. No certificate page is valid without bearing the stamp of the Society and no copied form of the certificate is regarded as valid. Any part of the certificate is not to be extracted or abridged by any unit or individual in any form. This approval certificate does not constitute the inspection of the Society about the quality of the unit/batch product. Related parties who are doubted about the authenticity of the certificate may inquire of the Society or its offices.



中国船级社总部/CCS headquarters: 北京市东直门南大街9号船检大厦 邮编: 100007 电话/Tel: +86(10)58112288 传真/Fax: +86(10)58112811
CCS Mansion, 9 Dongzhimen Nan Da Jie, Beijing 100007, China 网址/Web Site: <http://www.ccs.org.cn>
本地检验机构/CCS Local Office: 中国船级社卑尔根办事处 CCS Bergen Branch 电话/Tel: +47 55613500 传真/Fax:

BG26821731

N: 16669890

7.IMO Resolution MSC.191(79)

8.IMO Resolution MSC.302(87)

产品明细/ Product Description

回声测深仪/ECHO SOUNDER	
产品型号/Type	: GDS 102
额定电压/Rated voltage	: 115/230 V AC, 24 V DC
测量范围/Measure range	: 0-5000 m
测量精度/Depth Precision	: 1%
频率/Frequency	: 24/38/50/200 k Hz
罗经安全距离/Compass safe distance	: 0.3 m
数据存储/Data History	: 24 小时/h
系统组成/System configuration	: See item "Others" in this certificate

批准的图纸和设计计算书/ Approved Drawings and Design Calculations

图纸批准号/ Drawings Approval No. : NP18A00014

产品认可试验报告/ Approval Test Report

试验报告编号/Test Report No.	: 50989
试验报告日期/Test Report Date	: 2005-09-08
试验单位/ Laboratory	: Nemko
试验单位地址/ Test Address	: Norway
试验报告编号/Test Report No.	: E08580.00
试验报告日期/Test Report Date	: 2008-11-21
试验单位/ Laboratory	: NEMKO
试验单位地址/ Test Address	: Norway
试验报告编号/Test Report No.	: Operational test report
试验报告日期/Test Report Date	: 2009-02-23
试验单位/ Laboratory	: Skipper Electronics AS
试验单位地址/ Test Address	: Ryensvingen 5, 0612 Oslo Norway
试验报告编号/Test Report No.	: Integration test for SAM4900
试验报告日期/Test Report Date	: 2016-10-10
试验单位/ Laboratory	: -
试验单位地址/ Test Address	: SKIPPER Electronics AS
试验报告编号/Test Report No.	: Ryensvingen 5, 0612 Oslo Norway
试验报告日期/Test Report Date	: 55443-060340
试验单位/ Laboratory	: 2006-05-03
试验单位地址/ Test Address	: -
试验报告编号/Test Report No.	: Senton GmbH EMI/EMC Test Center
试验报告日期/Test Report Date	: -
试验单位/ Laboratory	: Straubing Germany
试验单位地址/ Test Address	: 6045-06-AA-06-PB001
试验报告编号/Test Report No.	: 2006-08-07
试验报告日期/Test Report Date	: -
试验单位/ Laboratory	: Senton GmbH EMI/EMC Test Center
试验单位地址/ Test Address	: -
试验报告编号/Test Report No.	: Straubing Germany
试验报告日期/Test Report Date	: 1178-06-GG-06-PB001
试验单位/ Laboratory	: 2006-07-20
试验单位地址/ Test Address	: -
试验报告编号/Test Report No.	: Zertifizierungs GmbH
试验报告日期/Test Report Date	: -
试验单位/ Laboratory	: Germany
试验单位地址/ Test Address	: BSH/46162/0120314/06
试验报告编号/Test Report No.	: 2006-06-16
试验报告日期/Test Report Date	: -
试验单位/ Laboratory	: Federal Maritime and Hydrographic Agency
试验单位地址/ Test Address	: -
试验报告编号/Test Report No.	: Germany
试验报告日期/Test Report Date	: IEC622288 Ed2:2014 additional tests
试验单位/ Laboratory	: 2017-01-13

试验单位/ Laboratory	:	-
试验单位地址/ Test Address	:	SKIPPER Electronics AS
试验报告编号/Test Report No.	:	Ryensvingen 5, 0612 Oslo Norway
试验报告日期/Test Report Date	:	Performance test for GDS 101
试验单位/ Laboratory	:	2000-12-08
试验单位/ Laboratory	:	-
试验单位地址/ Test Address	:	SKIPPER Electronics AS
试验报告编号/Test Report No.	:	-
试验报告日期/Test Report Date	:	Ryensvingen 5, 0612 Oslo Norway
试验单位/ Laboratory	:	Change report for regulators
试验报告日期/Test Report Date	:	2014-02-21
试验单位/ Laboratory	:	-
试验单位地址/ Test Address	:	SKIPPER Electronics AS
试验报告编号/Test Report No.	:	-
试验报告日期/Test Report Date	:	Ryensvingen 5, 0612 Oslo Norway
试验单位/ Laboratory	:	DANAK-196857
试验报告日期/Test Report Date	:	2003-03-28
试验单位/ Laboratory	:	-
试验单位地址/ Test Address	:	DELTA
试验报告编号/Test Report No.	:	-
试验报告日期/Test Report Date	:	Horsholm Denmark
试验单位/ Laboratory	:	2000-1363
试验报告日期/Test Report Date	:	2000-10-30
试验单位/ Laboratory	:	-
试验单位地址/ Test Address	:	DET NORSKE VERITAS
试验报告编号/Test Report No.	:	-
试验报告日期/Test Report Date	:	Hovik Norway
试验单位/ Laboratory	:	24983
试验报告日期/Test Report Date	:	2004-08-27
试验单位/ Laboratory	:	-
试验单位地址/ Test Address	:	Nemko
试验报告编号/Test Report No.	:	-
试验报告日期/Test Report Date	:	Oslo Norway
试验单位/ Laboratory	:	22185
试验报告日期/Test Report Date	:	2004-04-30
试验单位/ Laboratory	:	-
试验单位地址/ Test Address	:	Nemko
试验报告编号/Test Report No.	:	-
试验报告日期/Test Report Date	:	Oslo Norway

产品适用范围/ Application of the Product

1. Ships and offshore installations.
2. Refer to item "Others" in this certificate for other application and limitation.

认可保持条件/ Maintenance Requirements of Approval

1. 型式认可后, 如果产品及其重要零部件的设计、所用材料或制造方法有所改变, 且影响到产品的主要特性、特征; 或产品的性能指标有所更改, 且超过认可的范围, 则有关图纸和文件应经检验机构审批。并在检验机构认为必要时, 经本社检验人员见证有关试验和进行检查, 其结果应能证实仍符合认可条件。
After type approval, if there are changes to the design, materials used or manufacturing method of the product and important components and such changes affect major characteristics and properties of the product, or property indexes of the product are changed and exceed the scope of approval, related drawings and documents are to be examined and approved by the concerned survey office. Where deemed necessary by the survey office, the surveyor to the Society will go to witness relevant tests and conduct inspection and the results should be able to demonstrate compliance with the approval conditions.
2. 工厂的质量管理体系应保持有效运行, 并且与认可时一致。如果质量管理体系发生改变, 应经原体系认证机构审核并报告本社批准。
The quality management system of the factory shall be ensure effective operation, and shall be the same as the situation of approval. If there are any changes to the quality management system, auditing of the original certification organization for quality management system and the society's approval shall be obtained.
3. 认可证书有效期内, 如果出现可能导致本社取消认可的情况, 工厂应及时采取有效的纠正措施。
Within the validity of the approval certificate, if cases occur that may cause the Society to withdraw the approval, the manufacturer should take corrective actions in a prompt and effective manner.
4. 在认可证书有效期内, 本社检验人员可在未经事先通知的情况下对工厂的产品制造过程进行审核, 以验证产品的生产是否符合业经本社批准的图纸和文件。工厂应予以配合。
Within the validity of the approval certificate, the surveyor to the Society may pay unannounced audit

to the manufacturing process of the product in order to confirm whether it is in compliance with the drawings and documents approved by the Society. The factory should provide an active cooperation and necessary for the surveyor.

5. 如果属于获得型式认可B 模式证书, 且无需颁发船用产品证书/等效证明文件的情况, 证书获得者应接受本社每年一次的定期审核, 定期审核日为认可证书期满之日对应的每一周年日, 检查工作可在周年日的前后三个月内进行。If belong to the situation of the product has type approval mode B certificate, and marine product certificate/equivalent document is not necessary, those who have obtained the certificate should be subject to periodical audit every year. The periodical audit should be carried out within 3 months before and after the anniversary date which corresponds to the date of expiry of the relevant.

认可后的产品检验方式/ Method of Product Inspection after Approval

按照规范逐件检验的产品/The product inspected one by one in term of the rules;

认可后的产品检验应由本社验船师根据本社规范规定逐件按批准的产品检验计划进行检验, 经检验合格后由本社颁发船用产品证书。

After approval, product inspection should be carried out one by one by the Surveyor of the Society in accordance with the approved product inspection scheme, and the Marine Product Certificate will be issued by the Society upon satisfactory inspection.

对于原材料和零部件的检验要求/ Inspection Requirements for Materials and Components

产品如下原材料和零部件应由本社认可的制造厂生产/The following materials and components of the product should be manufactured by the factory approved by the Society:无/Nil.

产品如下原材料和零部件应经本社检验, 持有本社产品证书/The following materials and components of the product should be inspected and certificated by the Society:无/Nil.

产品如下原材料和零部件的制造厂清单, 经本社批准方可变更/The list of manufacturer for the following materials and components of the product should not be changed without the Society's approval:无/Nil.

责任声明/Statement of Responsibility

本社的认可不影响、替代与本社授权或检验无关的各方对上述工厂的认可和发证, 并且不对与本社授权或检验无关的各方负责, 不承担其未经应允而承认、接受本社认可所导致的法律和经济责任。

The approval of the Society does not affect and replace any approval and certification of the manufacturer by any parties that bear no relation with this Society's authorization or survey and therefore takes no responsibility for these parties. The Society does not undertake any legal and economic liabilities arising from accepting this Society's certificate without prior permission from this Society.

其他/Others

1. 本证书由原型式认可证书(No. BG15T00003)换新并替代原证书。

This certificate is renewed from and supersedes the previous Type Approval Certificate No. BG15T00003.

2. Other product description:

1)Hardware Modules:

--Echo sounder operator unit GDS102

--Transducer 50 kHz;TGM60-50-xxL

--Transducer 200kHz;NGM100-200-xxL and TGM50-200-xxL

Note:xx is numerical value for the cable length in meters

2)Software Modules: SW version 1.13.x

3)Protect degree:

--Transducer: IP68

--Junction Box:IP56

--Operator Unit Cabinet: IP42

4)Optional Equipments include:

--Remote dimming control: IR30DIM

--Transducer selector switch fore/aft :ENS518

--Digital depth repeater:IR301 SW version 2.xx

--Digital depth repeater:UDD SAM 4900

--Digital multi repeater:CD 401 MR

3. The certificate is also valid for the echosounding equipment with type designations:

(1) Raytheon GDS 102

(2) Kelvin Hughes GDS102

4. Approval history:

--Initial approval:BG15T00003;

--First renewal approval:BG18T00009_02.

5. 本社已审核了产品厂无石棉声明，但本社的审核不免除产品厂按照合同关系向订货方保证产品无石棉的责任。
The declaration of asbestos-free submitted by manufacturer has been reviewed by the Society.
However, liability of the manufacturer to guarantee the products are asbestos-free to purchaser under contract will not be exempted.



*****本证书正文完/ End of Text*****

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB00001XY
Revision No:
1

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV GL AS under the authority of the Government of Norway.

This is to certify:

That the Echo-sounding equipment

with type designation(s)
Skipper GDS102

Issued to

Skipper Electronics AS
Oslo, Norway

is found to comply with the requirements in the following Regulations/Standards:

Regulation **(EU) 2018/773**,

item No. MED/4.6. SOLAS 74 as amended, Regulations V/18, V/19 & X/3, IMO Res. A.224(VII), IMO Res. A.694(17), IMO Res. MSC.36(63), IMO Res. MSC.74(69), IMO Res. MSC.97(73), IMO Res. MSC.191(79), IMO Res. MSC.302(87)

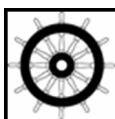
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2024-02-12**.

Issued at **Høvik** on **2019-02-13**

DNV GL local station:
Sandefjord

Approval Engineer:
Frederik Tore Elter



Notified Body
No.: **0575**



for **DNV GL AS**

Digitally Signed By: Alonso Pontes, Marta

Location: DNV GL Høvik, Norway

On behalf of

Roald Vårheim
Head of Notified Body

A U.S. Coast Guard approval number will be assigned to the equipment when the production module has been completed and will appear on the production module certificate (module D, E or F), as allowed by the "Agreement between the United States of America and the EEA EFTA states on the mutual recognition of Certificates of Conformity for Marine Equipment" signed 17 October 2005.

The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.

This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.

Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.



Job Id: **344.1-001682-5**
Certificate No: **MEDB00001XY**
Revision No: **1**

Product description

Hardware modules:

- Echo sounder operator unit GDS102
- Transducer 50 kHz; TGM60-50-xxL
- Transducer 200 kHz; NGM100-200-xxL and TGM50-200-xxL

xx is a numerical value for the cable length in meters.

Software modules:

- SW version 1.13.x

Optional features

Features:	Type:	Marking:
<ul style="list-style-type: none">▪ Remote dimming control:▪ Transducer selector fore/aft:▪ Digital depth repeater: SW version 2.x	IR30DIM ENS518 IR301	IR30DIM ENS518 Skipper IR301, or Raytheon IR301, or Kongsberg Maritime RD301
<ul style="list-style-type: none">▪ Digital depth repeater:▪ Digital multi repeater:	UDD SAM 4900 CD 401 MR	UDD SAM 4900 CD 401 MR

Application/Limitation

The certificate is also valid for the echo sounding equipment with the type designations:

- Raytheon GDS102
- Kelvin Hughes GDS102

Type Examination documentation

DNV GL No	Drawing No	Rev.	Title
27	TAA000015T		Certificate: DNV GL, CD 401 MR
26		13.01.2017	Test report: Additional testing for Display standards for GDS101, GDS102, DL850, EML224, CD401
23	DM-G002-SB	1702	Manual: GDS102 Operation and Installation Manual
11			Survey report- IEC 61162 (2010) testing
9	E08581.00		Test Report: NEMKO, Tests acc. to EN60945 (2002)
8		23.02.2009	Test Report: Operational test for GDS102 Echo Sounder
5006 *		20041018	Skipper GDS102 Service Manual
5005 *		1	Performance test report for GDS102
5004 *		20041020	Skipper Mecanical installation manua
5003 *			Test reports for SAM 4900
5002 *		October 2006	Integration test for SAM 4900
5001 *			IEC 60945 test reports

* Files to be found folder TAA4172

Job Id: **344.1-001682-5**
Certificate No: **MEDB00001XY**
Revision No: **1**

Tests carried out

- Environmental Tests, EN 60945 (2002) incl Corr.1 (2008)
- Performance Tests, ISO 9875 (2000)
- Serial Interface Tests, IEC 61162-1 (2016)
- Performance Tests, IEC 62288 (2014)

Marking of product

- Skipper GDS102, or
- Raytheon GDS102, or
- Kelvin Hughes GDS102

The type designation and name and contact address of the manufacturer shall be affixed visibly, legibly and indelibly to the product. In addition the product shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage.